



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,146	11/18/2003	Sudhir K. Madan	TI-34845	6785
23494	7590	10/08/2004	EXAMINER MAI, SON LUU	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			ART UNIT 2818	PAPER NUMBER

DATE MAILED: 10/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/717,146	MADAN, SUDHIR K.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Son L. Mai	2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11-18-03</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statement filed 11-18-03 has been considered.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-45 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. Patent 5,675,530 issued to Hirano et al. (hereinafter referred to as "Hirano").

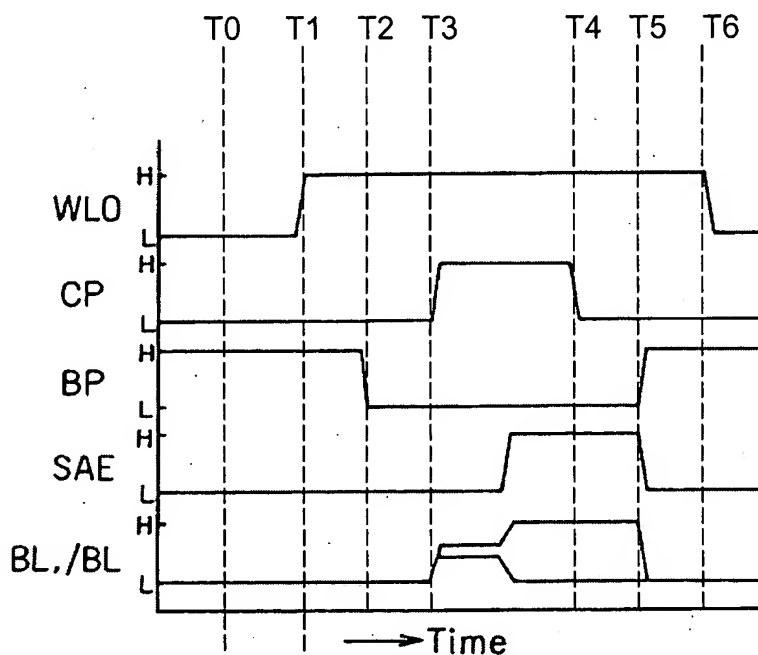


FIG. 5

Regarding claim 1, Hirano discloses a method of operating a memory circuit comprising the steps of: activating a precharge signal (BP at time T0 in fig. 5) applied to a precharge circuit (QnBP0-QnBP2) to precharge a bitline to a predetermined voltage (Vss); activating a first control signal (WL0 at time T1) from an inactive state while the precharge signal is active, the first control signal applied to a control terminal of a memory cell transistor (Qn0), the memory cell transistor having a current path connected to the bitline; and inactivating the precharge signal (at time T2) while the first control signal is active.

Regarding claims 2 and 3, the memory cell comprising different materials is discussed or known in the art (column 1).

Regarding claim 4, the step of inactivating the first control signal (WL0) while the precharge signal (BP) active is shown at time T6.

Regarding claim 5, the step of activating from an inactive state, a second control signal (CP) applied to the memory cell after the step of inactivating the precharge signal is shown at time T3.

Regarding claim 6, the step of inactivating the second control signal (CP) while the first control signal active occurs at time T4; and the step of activating the precharge signal (BP) while the first control signal active and the second control signal inactive occurs at time T5.

Regarding claim 7, Hirano discloses at column 1, lines 49-52, the first control signal is a wordline signal, and the second control signal is a plateline signal.

Regarding claim 8, Hirano shows in figure 3, the wordline signal is applied to a first wordline (WL0) and not applied to a second wordline (WL1), and wherein the plateline signal (CP) is applied to memory cells (Qn0, Qn1) connected to the first and the second wordline.

Regarding claims 9 and 10, Hirano shows in figure 5, the step of activating a precharge signal (at time T0) precharging the bitline (BL) and a complementary bitline (/BL) to the predetermined voltage (Vss).

Regarding claims 11-45, since the claims recite similar limitations as in claims 1-10, they are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,675,530 issued to Hirano et al.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hirano (U.S. Patent 5,467,302) teaches ferroelectric memory device relating to precharge timing of bitlines.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son L. Mai whose telephone number is 571-272-1786. The examiner can normally be reached on 8am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2818

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

10-06-04



Son L. Mai  
Primary Examiner  
Art Unit 2818